SEAS AT RISK

Priorities for environmentally responsible aquaculture in the EU

Joint NGO paper – August 2014

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Cover picture: Thomas Bjørkan

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1 Summary

In this paper, environmental NGOs propose several priorities to ensure that European aquaculture develops in an environmentally responsible manner. To minimise the environmental impacts of aquaculture the priorities are to ensure sustainable sourcing of feed, to avoid escapes by adopting technical standards, to minimise biodiversity impacts and to reduce the impact of chemicals and medicine use. To fill the knowledge and data gaps, more research and data collection are needed regarding the effects of aquaculture on wider ecosystems. This should underpin the development of measurable targets and indicators. Also aquaculture governance needs to be improved, to ensure early and effective stakeholder and public participation and the integration of environmental legislation. Innovative production processes such as integrated multi-trophic aquaculture and aquaponics should be supported and encouraged. Public funding needs to be focused and accountable and environmentally responsible trade promoted.

This paper focuses on the environmental aspects of sustainability, as this is within the remit and expertise of environmental NGOs. Sustainable aquaculture should be environmentally acceptable, economically viable, and socially equitable. Agreeing among EU stakeholders on a wider definition of 'sustainable aquaculture' is therefor also a priority.

2 Context

While in the last three decades global aquaculture has seen growth figures of around 8 % per annum[1], in Europe aquaculture production has stagnated over the past decade, and currently provides only 10% of European seafood consumed. The EU sees huge growth potential in the sector and believes this would contribute to closing the gap between dwindling wild fish catches and the ever-growing consumer demand for seafood. Efforts to boost the sector are included in the reformed Common Fisheries Policy (CFP), the European Maritime and Fisheries Fund (EMFF) and the EU's Blue Growth agenda for economic growth and employment, which singled out the aquaculture sector as one of its five priorities[2].

The Commission's intention is to boost the EU aquaculture sector through an open method of coordination among the Member States. According to the CFP, Member States have to develop multiannual national strategic plans for the development of aquaculture activities on their territory by 2014 to enable them to apply for 2014-2020 EMFF funding. To support the national planning, the Commission issued 'Strategic Guidelines for the Sustainable Development of EU Aquaculture'[3]. However, rather than consolidating a vision of sustainable development underpinned by clearly defined principles of sustainability, the EU Guidelines instead focus on actions to remove administrative barriers, and showcase the perceived high environmental, animal health and consumer protection standards as the EU aquaculture's main competitive factors.

[1] FAO, 2014, Sustainable fisheries and aquaculture for food security and nutrition
[2] COM(2012) 494 final, Blue Growth opportunities for marine and maritime sustainable growth
[3] COM/2013/229 Strategic Guidelines for the sustainable development of EU aquaculture

It must be acknowledged that the European aquaculture sector has in recent years taken important steps to improve its environmental performance, including the setting of codes of conduct, the development of technologies and management techniques (e.g. improvement of feed efficiency, reduction of escapes, closed circulation systems etc.). EU aquaculture is also better regulated than most uncertified aquaculture outside Europe. The Federation of European Aquaculture Producers (FEAP) has set up a Code of Conduct and the declaration 'Streaming Sustainability – European aquaculture for the next generation' to which their European producer members voluntarily agreed.

However, the environmental sustainability claim is not yet reality for many segments of the industry; various environmental challenges remain to be solved. There are a number of production standards and eco-labels in use in European aquaculture, but a commonly accepted EU production and labelling standard setting out requirements for ecologically sustainable production is as yet lacking.

NGOs support the growth of aquaculture in Europe, provided it is underpinned by sustainable development principles and managed using the ecosystem based approach. NGOs are concerned in particular about the heavy dependence on marine proteins and oils to fulfil feed requirements (and its link to overfishing), the continued use of unknown quantities of medicines and chemicals, ineffective disease management, and wider ecosystem effects of production that are as of yet uncertain, due to the lack of research and credible data. Also, as long as the EU continues to practice ranching of IUCN listed endangered species such as Bluefin tuna and European eels, the aquaculture sector can hardly stand the test of sustainability.

3 Minimise the environmental impacts of aquaculture

As a priority, NGOs would like to see the following priorities addressed in order to ensure that European aquaculture develops in an environmentally responsible manner:

3.1 Ensure sustainable sourcing of feed

European aquaculture should not lead to the further overfishing and proper safeguards need to be established to ensure that growth in aquaculture does not jeopardise the MSY objectives of the Common Fisheries Policy. Ensuring the traceability of feed components is key to this.

The Aquaculture Stewardship Council (ASC) worldwide label certification programme and organic aquaculture farming are promoting the use of a responsible feed source and it is anticipated that an increasing amount of responsible and sustainable feed components will become commercially available. The aquaculture industry should set clear targets and commitments relating to the sourcing of responsible and ultimately sustainable fishmeal and fish oil. Without this, it is unacceptable to claim that EU aquaculture products are environmentally sustainable.

What NGOs want to see:

- Immediate guarantees that all fish meal and oil used in EU aquaculture is at least certified to IFFO RS – the responsible standard for production and sourcing. [4]
- Within 5 years of its availability, the incorporation of an increasing percentage of independently certified fishmeal and fish oil within feeds, with certification done by a credible and independent environmental and social certification scheme– such as MSC – that uses low trophic index assessment criteria and FAO code of conduct principles.
- In the longer term, ensuring that all finfish aquaculture facilities are net producers of fish protein.
- An increased use of non-fish based feed ingredients (such as algae, vegetable proteins and oils and land animal proteins) that are sourced sustainably. All plant proteins used should come from certified responsible sources.
- A commitment to the commercial trial of ecologically responsible alternatives to fishmeal and fish oil based diets, i.e. plant based feed, other existing sources of marine proteins and oils and innovative feed ingredients.
- Discouragement of the use of discards or bycatch (the latter should be eliminated rather than utilised, unwanted catches should be avoided and the amount to be landed reduced as much as possible).
- Maximise the use in the production of fishmeal and fish oil of by-products and trimmings from the processing of seafood for human consumption.
- Assessments of the environmental footprint of alternative feeds.

3.2 Avoid escapes by adopting technical standards

In the last few years, the industry has put a lot of effort into regulating good practise for handling fish and monitoring escapes. Adoption of best available technology to reduce escapes is a prerequisite, as is better recording, monitoring and use of traceability tools. As to the impacts of escapes on the wider ecosystem, much more research is needed. Achievements under the FP7 project 'FishPopTrace' and the new project 'Aquatrace' could be adopted for similar work and the assessment for the genetic impact of aquaculture escapees.

What NGOs want to see:

- Zero escapes as an aspirational target.
- Adoption and enshrining in legislation of EU technical standards for all aquaculture equipment, such as for example the Scottish technical standards. This should include the development of standards to avoid escapes for land based systems.
- The undertaking of training of aquaculture staff on how to prevent escapes and on correct operating procedures for equipment.
- The recording and reporting of escapes from fish farm facilities and the setting of targets for year-on-year reduction.
- The use of tags/genetic markers on all fish to ensure traceability of escapees to source, using the provisions of the control regulation[5], so the operator can be identified and penalised and better data can be collected.

[4] http://www.iffo.net/iffo-rs-standard

- Research into the impact of escaped farmed fish in relation to their survival; impact on and interaction with their wild counterparts.

3.3 Minimise negative impacts on biodiversity

The impacts – and benefits – of various types of aquaculture on species and habitat biodiversity, and the wider ecosystem, requires further research to fully understand what effects and risks aquaculture poses to sensitive and key natural features. Careful management in the form of local planning, including development restrictions in and around designated areas, needs to be imposed. As indicated in the Commission's guidance document on aquaculture activities in the Natura 2000 Network, there is a need for a case-by-case approach within sound planning and assessment procedures.[6]

What NGOs want to see:

- The designation of aquaculture-free zones in areas that are particularly sensitive to the negative impacts of aquaculture (e.g. in terms of habitats and species) and within national aquaculture plans and national maritime spatial plans.
- Only permitting aquaculture that can be proven not to have adverse effects on designated features in Natura 2000 sites protected under the EU Birds and Habitats Directives, or other coastal and marine protected areas and marine conservation zones.
- Exclusion of open cage systems in sub-basins with eutrophication problems (in line with the Coalition Clean Baltic statement on aquaculture in the Baltic[7]).
- Ensuring aquaculture is nutrient balanced (i.e. no excess nutrient release in the environment) and development of reliable nutrient budgets as a required part of aquaculture permits.
- Production of non-established exotic/non-native species should only use fully closed systems so that no fingerling or mature fish can escape from the system. Adopt regulation to ensure the disinfection, correct treatment and disposal of their effluent water.
- The support of aquaculture that provides environmental services, such as coastal lagoons, extensive aquaculture and inland fish ponds that benefit nature and biodiversity and provide recreational areas, mussels and seaweed culture (which reduce eutrophication and GHG).
- Further research to ascertain the scale and impact of the interaction between escaped aquaculture-organisms with their wild counterparts. Such research should include but not be limited to genetic dilution of wild counterparts so as to reduce their capacity to survive or reproduce in the wild.
- The phasing-out of ranching or non-hatchery based aquaculture in Europe, with the exception of bivalve ranching. The elimination of Bluefin tuna and European eel ranching should be a priority.
- The prohibition of the use of chemicals, antibiotics used in human medicine, hormones and activities such as lethal predator control within protected areas.

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[5] Council regulation (EC) No 1224/2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy.

[6] European Commission, 2012, Guidance on Aquaculture and Natura 2000, http://ec.europa.eu/fisheries/cfp/emff/doc/guidance-aquaculture-natura2000.pdf

[7] Coalition Clean Baltic (CCB), 2014 Position paper on principles and requirements for Sustainable Aquaculture in the Baltic Sea Region http://www.ccb.se/2014/03/ccb-statement-on-sustainable-aquaculture/

3.4 Reduce the impact of chemicals use

The use of chemicals and antibiotics (those used in human medicines) in aquaculture poses risks to the ecosystems. Comprehensive public data on the amounts of these chemicals released into the surrounding receiving environment are lacking in some Member States, and it is therefore difficult to assess the related risks.

What NGOs want to see:

- A full understanding of and minimisation of the negative impacts on the environment, habitat and species arising from the use of chemicals, antibiotics (those used in human medicines) and other medicines.
- Gradual replacement by non-chemical alternatives.
- Improvements in management and operations on aquaculture facilities to reduce the need for chemical intervention, such as fallowing, site rotation and area management agreements.
- Encouragement and support for the use of eco-friendly antifouling coatings, nets and mechanical products that reduce/eliminate the need for copper based treatments.
- The monitoring of the type and amount of chemicals and medicines used, including data collection, mandatory recording and impact assessments. This information should be made publicly available.
- The supporting of research on disease outbreaks, causes, prevention, mitigation and ecologically responsible treatments.

4 Address gaps in data and knowledge and develop policy-relevant indicators

Due to gaps in data and knowledge, it is at present difficult to comprehensively assess the environmental impacts of European aquaculture production, particularly in relation to impacts on habitats, species, biodiversity and the wider ecosystem. There is also a lack of knowledge about the amount and composition of feed currently being used, and its availability and composition with respect to the forecasted production targets. Such shortcomings warrant a precautionary approach to the sector's growth ambitions, especially for new developments such as offshore aquaculture and the farming of novel and non-indigenous species and populations. We need in particular to agree on a set of policy relevant indicators to make robust and accurate assessments of European aquaculture and its environmental performance. This should build on indicator work done previously by e.g. FAO, JRC, EEA, EATIP, IUCN and others.

What NGOs want to see:

- The consolidation and implementation, in cooperation with stakeholders, of a set of policy-relevant indicators to measure progress against defined sustainability targets and including amongst others: feed composition and ingredient sourcing; feed conversion ratios; escape causes and figures; chemical use and discharge consents; stocking densities; use of medicines; disease outbreaks and mitigation measures; and predator interactions including lethal control numbers and species.
- The improvement of data quality and availability in terms of its scope and dissemination at EU and Member State level.

- The integration of data required for the indicators in the new Data Collection Framework, and in the MSFD and WFD monitoring systems.

5 Improve aquaculture governance: integrate environmental legislation, ensure public participation

Aquaculture policies and national multi-annual aquaculture plans must integrate with existing EU and national environmental legislation. The objectives and targets set under the Marine Strategy Framework Directive (MSFD), the Water Framework Directive (WFD) and the Birds and Habitats Directives should be fully respected.

Streamlining governance at EU, regional and Member State level is key to policy effectiveness. The EU guidelines for sustainable aquaculture therefore call for Maritime Spatial Planning (MSP) and Integrated Coastal Zone Management (ICZM) and a Directive on MSP has recently been adopted[8]. MSP and ICZM should include aquaculture and be based on the ecosystem approach, taking account of the carrying capacity of the marine environment, coastal zones and inland waters, of the nature and biodiversity value, its vulnerability and resilience. Spatial planning should help to identify areas in which aquaculture can take place with minimal environmental impact and within the ecosystem's carrying capacity, taking account also of the cumulative effects of other maritime activities.

Integration of environmental objectives in these plans should be ensured by Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) of subsequent projects. It is also important to promote best available practice and to encourage the sector to go beyond the goals set by environmental policies, e.g. by encouraging certification to independent certification standards.

What NGOs want to see:

- The definition of environmental carrying capacity prior to future aquaculture development.
- The development of EU good practice guidelines regarding the application of the precautionary principle in the aquaculture sector, and their integration with MSFD and WFD.[9]
- A review of EIA/SEA legislation and processes to ensure they account sufficiently for aquaculture.
- Spatial planning and SEA should be made mandatory for all regional and national aquaculture plans and EIAs conducted for all aquaculture facilities.
- Development of good practice guidance for SEA of MSPs and of aquaculture plans and EIA of aquaculture projects.
- Information should be made publicly available in a transparent, timely and clear manner and public participation conducted in line with the Convention on Access to Information, Public Participation in

[8] Directive 2014/.../EU of the European Parliament and of the Council establishing a framework for maritime spatial planning

[9] This can build on the ongoing SUSAQ project which aims at developing guidance on the implementation of the Water Framework Directive, Marine Strategy Framework Directive and other relevant environmental legislation in relation to aquaculture. See http://www.euaquaculture.com/

Decision-Making and Access to Justice in Environmental Matters (the Århus Convention) and the Directive 2003/35/EC on public participation in respect of the drawing up of certain plans and programmes relating to the environment.

- It should be ensured that participatory processes guarantee a level playing field between all stakeholders (including local organizations, NGOs and other civil society organizations) in the evaluation and decision making on any new aquaculture development.

6 Promote the development of integrated multi-trophic aquaculture and aquaponics

Innovative aquaculture production processes with minimal or zero impacts on surrounding ecosystems need to be promoted and supported. Integrated multi-trophic aquaculture refers to the farming of different aquaculture species together in a way that allows one species' wastes to be recycled as feed for another. Aquaponics combines conventional aquaculture (raising aquatic animals such as snails, fish, crayfish or prawns in tanks) with hydroponics (cultivating plants in water) in a symbiotic environment.

What NGOs want to see:

- The support and encouragement, through funding and licensing, of the development of integrated multi-trophic aquaculture and aquaponics systems, with the aim of reducing the nutrient load arising from farming primary species.
- The implementation of compensatory measures, related to nutrients, such as the creation of wetlands, algae and mussel farming.

7 Ensure that public funding for aquaculture is focused and accountable

It is crucial that public funds do not support the expansion of an aquaculture industry whose production methods lead to negative environmental impacts and in turn result in poor long term profitability, as is currently seen in the catching sector. Public funds should support services for the public good, like data collection, research, balanced stakeholder engagement in a dedicated advisory council, monitoring, control and enforcement, and the establishment of a robust, comprehensive spatial planning framework as well as certification by independent certification schemes.

What NGOs want to see:

- The allocation of sufficient public funding in order to properly integrate environmental concerns in aquaculture development policies and practices.
- Public funding focussed on collective needs, such as data collection and monitoring.
- A denial of funding to actors who have previous infringements on environmental legislations or fisheries activities.
- Ensure that public resources are returned in the case of any infringement.

- The allocation of public funds to support alternative models of development that are environmentally and socially more desirable (such as the use of better technologies and closed containers and independent certification).

8 Promote environmentally responsible trade at the global level

Today, 10% of the EU seafood consumption comes from aquaculture, 25% from EU fisheries and 65% from imports from third countries (including both fisheries and aquaculture). In order to create a level playing field for sustainable aquaculture products, the EU should strive to establish similar standards for imported aquaculture products as for EU products.

What NGOs want to see:

- The inclusion of provisions on high environmental standards, as well as sanitary standards, in the framework of EU trade agreements with third countries as regards fish products, including aquaculture products.
- Ensuring, in the longer term, that all imported aquaculture products coming into Europe are fed IFFO RS feed or comply with the emerging certified feed standards such as the upcoming ASC Feed Standard.

9 Agree on a definition of 'sustainable aquaculture' and translate this into production and labelling standards.

To date there is no globally accepted recognised definition of "sustainable aquaculture". The wider sustainability aspects of European aquaculture – linking environmental, social and economic aspects - warrant additional reflection. Finding a definition is complicated by the fact that the aquaculture industry is diverse in terms of species, production methods and impacts.

A comprehensive and robust definition of sustainable aquaculture, including its defining principles, is essential to underpin the related policies and plans. A coherent overall framework of understanding should be developed in cooperation with other stakeholders (e.g. in the Aquaculture Advisory Council, which is to be created following the revision of the Common Fisheries Policy).

In order to ensure the accountability of the sector, sustainable development principles have to be underpinned by measurable targets and indicators to track progress and performance. Once defined, a number of tools are available for the planning and further development of sustainable aquaculture, e.g. ecosystem-based approach and adaptive management.

What NGOs want to see:

- An agreement among stakeholders on a definition of sustainable aquaculture based on the three pillars of sustainable development.

- The adoption of measurable targets and indicators to track progress of development.
- The translation of the principles of sustainable aquaculture into new or existing production standards and consumer facing labelling at point of sale.
- Ensure that standards are ISEAL[10] or ISO 65[11] compliant and are supported by a multi-stakeholder advisory group, including NGOs.
- The use of the sustainable development principles as the basis for setting criteria for imported seafood.

[10] http://www.isealalliance.org/
[11] www.iso.org

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